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09/872,401	06/01/2001	Tuan Nguyen	2001 P 09906 US	2647

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Siemens Corporation  
Intellectual Property Department  
186 Wood Avenue South  
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EXAMINER

BRODA, SAMUEL

ART UNIT PAPER NUMBER

2123

DATE MAILED: 06/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/872,401

Applicant(s)

NGUYEN ET AL.

Examiner

Samuel Broda

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-7,9-12,14-20 and 22-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-7,9-12,14-20 and 22-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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### DETAILED ACTION

1. This communication is in response to Applicants' Response mailed on 11 April 2005.

Claims 1-3, 5-7, 9-12, 14-20, and 22-24 are pending.

#### *Claim Rejections - 35 U.S.C. § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2.1 Claims 1-3, 5-7, 9, 18-20, and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Worhach et al, "Integration of Environmental Factors in Process Modeling for Printed Circuit Board Manufacturing, Part I: Assembly," Proceedings of the 1997 IEEE International Symposium on Electronics and the Environment, pp. 218-225 (May 1997), in view of Elliott, U. S. Patent 5,907,489 issued 25 May 1999.

2.2 Regarding claim 1, Worhach et al teaches a method for providing consulting services to a customer in connection with the customer's electronics assembly system, comprising the steps of:

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- a. identifying a set of solutions opportunities for the customer's electronics assembly system [solutions opportunities corresponding to minimization of waste streams, energy consumption, process time and to maximization of yield; see Abstract and "II. Model Development" at pages 219-221];
- b. modeling the customer's electronics assembly system in real time with the customer present [customer present to model system using internet-based implementation; see "III. Model Implementation" at pages 221-222 and Fig. 2];
- c. defining one or more performance metrics for a proposed solution [performance metrics shown in Table VIII at page 224 and Table IX at page 225 regarding aqueous and no-clean process alternatives];
- d. prioritizing the identified solutions by running the model for each of the identified solutions [prioritizing aqueous and no-clean process alternatives by energy and waste generation; see "IV. Case Study" at pages 222-224];
- e. selecting a proposed solution from among the prioritized, identified solutions ['no-clean' selected based on lower waste and energy generation; see Table VIII and Figs. 3-7];
- f. quantifying the benefit of the proposed solution relative to the one or more performance metrics ['no-clean' selected based on lower waste and energy generation; see Table VIII and Figs. 3-7]; and
- g. communicating the quantified benefit to the customer, wherein the quantified benefit comprises a cost of ownership measure [benefit displayed by web page].

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However, Worhach et al does not appear to explicitly teach that “the customer’s electronics assembly system is modeled within approximately one half hour” as appearing in the amendment to claim 1 as part of step “g.”

Elliott, U. S. Patent 5,907,489 teaches an “automated fixture builder system” that automatically designs fixtures to hold physical parts such as car doors. See column 1 lines 1-56. According to Elliott at column 1 lines 18-21:

Current fixture design practice is painstaking and laborious in nature. A typical fixture redesign may take two weeks of design effort due to the number of fixture design factors involved. Elliott solves this problem by automating the design process including use of “fixture generation rules which establish criteria for selecting the fixture components” (column 1 lines 44-45) and further states at column 1 lines 53-56 that:

The present invention reduces the time involved to build a fixture from the typical few weeks down to 15 or 30 minutes. **Such a reduction in time has significant commercial ramifications.**  
(Emphasis added.)

Regarding claim 1, it would have been obvious to one of ordinary skill in the art at the time of Applicants’ invention to perform the method of Worhach et al to model an electronics assembly system with one half hour, because performing the modelling in a fast manner would permit faster turnaround in the consulting process, benefiting both the consultant (who can supply services to more customers per unit time) and the customer (who can receive proposed solutions in a single interaction with the consultant).

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**2.3** Regarding claims 2-3 and 5, the method of Worhach et al represents the electronics assembly system at a material flow level of abstraction (see Fig. 1), uses simulation models (see “II. Model Development” at pages 219-221), and the proposed solutions relate to the machines in the assembly system.

**2.4** Regarding claims 6-7, the method of Worhach et al proposes solutions including information: (1) related to the software tools used in the assembly process, and (2) related to operating parameters of machines in the system, and calculates a cost of ownership measure corresponding to energy and waste consumption. See “IV. Case Study” at pages 222-224.

**2.5** Regarding claim 9, the additional method steps correspond to interactive use of the Internet-based implementation of Worhach et al.

**2.6** Regarding independent claim 18 and dependent claims 19-20 and 22-24, these claims are unpatentable over Worhach et al in view of Elliott and using the analysis of claims 1-7 and 9, with the customer session taking place during the customer’s use of the Internet-based implementation of the process models as described in “III. Model Implementation” at pages 221-222.

**2.7** Claims 10-12 and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Worhach et al, in view of Elliott, U. S. Patent 5,907,489 and further in view Puri, U. S. Patent 6,064,982 issued 16 May 2000 and filed 12 November 1997.

**2.8** Regarding claims 10-12 and 14-17, the combination of Worhach et al and Elliott teach the limitations appearing in claims 10-12 and 14-17 directed to the identification of

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customer requirements and constraints, configuration selection, determination of a performance measure, comparison of the performance measure to the constraints, and modeling the selected configuration within approximately one half hour. Nevertheless, the combination of Worhach et al and Elliott does not appear to explicitly teach the following portion of the limitation of independent claim 10:

- f. if the at least one performance measure satisfies the customer constraints, offering to sell at least a subset of the electronics assembly equipment of the configuration to the customer,
  - wherein the offer is developed, with the benefit of the model, during the sales session.

However, Puri teaches the use of a “smart configurator” that:

... recommends a system configuration that most nearly meets a customer's needs, based upon the results of an interactive customer product selection session in which the customer progresses through a dialog that is implemented in a series of cascading style sheets.  
(Abstract.)

The system and method of Puri generates an offer to sell a particular software configuration during the sales session. See Figs. 8-9 and corresponding text at column 5 line 60 through column 6 line 13. According to Puri at column 1 lines 37-41, such a system and method provides:

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an intelligent sales tool that provides field personnel/customers with access to current product information while guiding them through the needs assessment and product selection/configuration process.

**2.9** Regarding claims 10-12 and 14-17, it would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the interactive modeling and performance features of the electronics assembly system of the combination of Worhach et al and Elliott and to perform the sales function and offer generation features of Puri, because the resulting system would comprise an 'intelligent sales tool' that would permit field personnel to configure electronics assembly systems for customers.

### *Applicants' Arguments*

**3.1** Applicants first argue at page 2 of the Response that Worhach et al does not teach or suggest prioritizing the identified solutions, because it merely compares one process to another.

**3.2** Applicants next argue at page 2 of the Response that since Worhach et al contains no suggestion of anything for sale, it is improper to combine Puri with Worhach et al.

**3.3** Applicants finally argue at pages 2-3 of the Response that Elliott is non-analogous art in a completely different environment, and thus improper for combining with the remaining references.

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*Examiner's Reply*

**4.1** Regarding Applicants' first argument, the Examiner respectfully disagrees for the following reasons: the broadest reasonable interpretation of "prioritizing" using Applicants' Specification, includes the comparisons made by Worhach et al. Applicants' Specification at page 114 lines 9-12 appears to define "prioritizing" in the following sentence (with emphasis added):

At step 3008, the potential solutions are prioritized by including them in the model and running the model under these configurations, and then by comparing them with each other and possibly with the one or more performance metrics.

Thus the broadest reasonable interpretation of "prioritizing" as defined by Applicants includes the comparison process described in Worhach et al used to select a manufacturing process that minimizes waste.

**4.2** Regarding Applicants' second argument, the Examiner respectfully disagrees for the following reasons: Puri provides formal motivation to take a computerized model and use it in a sales presentation. The incentive to do so is monetary; to use a configuration model to make a sale. In manufacturing operations such as that modeled by Worhach et al, financial incentives such as minimizing waste are themselves valuable methods to be exploited. As Worhach et al states in the Abstract (with emphasis added): "Metrics for workplace environmental hazard and cost are developed to guide design decisions." Such exploitation is illustrated in Puri, and one of

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ordinary skill in the art would be naturally motivated to take a valuable process and commercially exploit it via sales to others.

**4.3** Regarding Applicants' final argument, the Examiner respectfully disagrees for the following reasons: a common (if not universal) motivation found in the {modeling, manufacturing, sales} arts is the desire to decrease total time from start-to-finish, including model-to-product and product-to-sale. Elliott is cited because it says what one of ordinary skill in the {modeling, manufacturing, sales} arts would naturally know:

The present invention reduces the time involved to build a fixture from the typical few weeks down to 15 or 30 minutes. Such a reduction in time as significant commercial ramifications.

Additionally, it should be noted that modeling system of Worhach et al is shown as implemented using web pages at Fig. 2 at page 222. It is highly unlikely that a user running the process models from the Internet would desire to spend more than a few minutes waiting for results. The nature of the problem to be solved (presenting manufacturing models to a user via the Internet) would encompass the motivation to speed up the process so as to not waste the user's time or attention.

### ***Conclusion***

**5.** The prior art made of record and not relied upon is considered pertinent to Applicants' disclosure.

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6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

7. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Samuel Broda, whose telephone number is (571) 272-3709. The Examiner can normally be reached on Mondays through Fridays from 8:00 AM – 4:30 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Leo Picard, can be reached at (571) 272-3749. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist, whose telephone number is (571) 272-2100.

  
SAMUEL BRODA, ESQ.  
PRIMARY EXAMINER